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**BEFORE THE
Federal Communications Commission
WASHINGTON, D.C.**

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OCT. 25 1996

**FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY**

In the Matter of)
)
Revision of the Commission's) CC Docket 94-102
Rules to Ensure Compatibility) RM-8143
with Enhanced 911 Emergency)
Calling Systems)

**REPLY COMMENTS OF THE
CELLULAR TELECOMMUNICATIONS INDUSTRY ASSOCIATION**

The Cellular Telecommunications Industry Association ("CTIA")¹ respectfully submits its reply to the comments responding to the Commission's Further Notice of Proposed Rule Making in this proceeding.² While CTIA and its members strongly support the goal of this proceeding, that is the broadened availability of enhanced 911 ("E911") services to users of wireless telecommunications, CTIA's Comments on the Further Notice opposed the Commission's proposal to require a higher degree of automatic location ("ALI") accuracy after

¹ CTIA is the international organization of the wireless communications industry for both wireless carriers and manufacturers. Membership in the association covers all Commercial Mobile Radio Service ("CMRS") providers, and includes forty-eight of the fifty largest cellular, broadband PCS, enhanced specialized mobile radio, and mobile satellite service providers. CTIA represents more cellular and more broadband PCS members than any other trade association.

² Report and Order and Further Notice of Proposed Rulemaking, CC Docket No. 94-102, FCC 96-264 (released July 26, 1996) ("Order & Further Notice").

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the five-year Phase II period,³ noting that the proposed requirements are overly aggressive and are not based on any evidence that such requirements are technically feasible. The record fully supports this conclusion.⁴

CTIA and the Public Safety Communicators continue to support deployment of the "Phase II" location systems set forth in the Commission's Order & Further Notice. However, as other commenters have observed, the most likely consequence of enacting the Commission's proposal to increase the location accuracy target would be to delay, or even prevent, deployment of the Phase II "ALI" capabilities. This would be the result if state and local officials defer their decision to fund Phase II ALI deployment in favor of

³ The Commission proposes that covered carriers be capable of providing to PSAPs, after the initial five-year period, information that locates a wireless 911 caller within a radius of 40 feet, using longitude, latitude, and vertical location data, and that provides this degree of accuracy for 90 percent of the 911 calls processed. Order & Further Notice at ¶ 138.

⁴ See Comments of the Mobile and Personal Communications Division of the Telecommunications Industry Association ("TIA"), at 5-9; Comments of Associated RT, Inc., at 29; Comments of E.F. Johnson at 4; Comments of Ericsson at 2; Comments of Harris-GCSD at 4; Comments of KSI Inc., at 5; Comments of Lucent Technologies at 3-5; Comments of Nokia at 3. While Garmin International and Tandler Cellular filed comments in support the proposed 40 foot spherical accuracy requirement, their support was based on the capabilities of GPS technology. GPS technology, unfortunately, does not work inside buildings or in any urban area where the receiver is unable to maintain simultaneous "line of sight" with a minimum of four satellites. See TIA Comments at n.9. As APCO, NENA, and NASNA observe, the 40 foot standard is needed only in dense urban settings and in-building use. Comments of APCO, NENA, and NASNA at 3.

40 foot, three dimensional, 90% accurate ALI systems that do not exist in today's world. In other words, the Further Proposal presents a classic example of how the "perfect" can be the enemy of the good.

CTIA's Comments on the Further Notice also opposed the Commission's proposal to require CMRS providers to transmit 911 calls from wireless handsets that do not transmit a code identification even without a request from the PSAP Administrator.⁵ Here again, the record fully supports CTIA's position. APCO, NENA, and NASNA state in their Joint Comments that "[a]t this time, we do not believe that it is necessary to impose a requirement that all PSAPs accept such calls."⁶ Based on its real-world experience with fraudulent and prank 911 calls placed from wireless phones,⁷ the New Jersey Office of Emergency Telecommunications Service ("OETS") urges the Commission to rule that non-initialized wireless phones not be allowed to access 911.⁸

Finally, the Ad Hoc Alliance for Public Access to 911 ("Alliance") continues to urge the Commission to require

⁵ Order & Further Notice at ¶ 149.

⁶ Comments of APCO, NENA, and NASNA at 7.

⁷ In one incident, a Police Officer was killed responding to such a call; in another incident, close to a hundred prank calls to 911 were made from a single cellular phone in a 72 hour period. Comments of New Jersey OETS at 2.

⁸ Id.

that wireless 911 calls be carried over the strongest compatible control signal.⁹ And CTIA continues its strong opposition to this proposal.

As CTIA and other commenters have noted,¹⁰ the Alliance proposal reflects a naive misunderstanding of how CMRS networks dynamically control power levels and hand-off calls to provide reliable communications. Moreover, if adopted, the Alliance proposal would lead to more dropped calls and less reliable emergency communications.

CMRS mobile units and base stations constantly monitor and adjust their signal strength as the user moves towards and away from any one base station.¹¹ Such measurements are required both to minimize interference and to "hand-off" a call as the user moves from one cell to another.¹² The use of dynamic power control permits wireless systems to provide reliable communications over a range of signal strengths.¹³

⁹ Comments of the Ad Hoc Alliance for Public Access to 911 Concerning the Further Notice of Proposed Rulemaking.

¹⁰ See Comments of AT&T Wireless at 4-5.

¹¹ As a consequence, a "strong" base station signal (indicating close proximity to the cell site) will correspond to a low mobile unit transmitter power level.

¹² See generally, Reference Manual for Telecommunications Engineering, Second Edition (John Wiley & Sons, Inc., 1994) at 1198 et seq. ("the mobile unit samples signal levels of all appropriate setup channels so it can respond through the cell site offering the highest signal level").

¹³ See, Section 2.1.2.2, "Cellular System Mobile Station-Land Station Compatibility Specification" (April 1981 Ed.), OET Bulletin No. 53.

If there is sufficient signal strength to initiate a call, the CMRS system will monitor and adjust the mobile unit's power level to insure a reliable connection.¹⁴

CTIA readily acknowledges that CMRS carriers' signal strength will vary throughout a market, just as the studies attached to the Alliance comments document.¹⁵ However, because CMRS networks are designed to provide reliable communications over a broad range of permissible power levels, variations in signal strength do not prevent calls from being processed. Therefore, the Commission need only consider a user's ability to make a wireless 911 call, not expected variations in permissible signal strength, in assessing the merits of the Alliance proposal.

Moreover, just as permissible variations in signal strength have no correlation to a CMRS system's reliability, signal strength also does not necessarily correlate to the

¹⁴ If the home carrier's signal is inadequate or the customer is out of range of the home system, the Commission's existing rules for cellular service require all mobile units to permit "roaming" on the "non-preferred" cellular band. See generally, Sections 2.3.9, 2.3.10, 2.6.2.1, and 2.6.2.5 "Cellular System Mobile Station-Land Station Compatibility Specification" (April 1981 Ed.), OET Bulletin No. 53. Thus, no rule change is required.

¹⁵ Indeed, even when a wireless phone is in a fixed location, signal strength can vary greatly over very short periods of time due to slight changes in the antenna placement and normal RF propagation effects, i.e., fading. This effect is easily demonstrated by observing the wide fluctuations in a cellular or PCS phone's signal strength indicator while the user is standing still.

user's proximity to a carrier's base station. All things being equal, a digital air interface will have a lower signal strength than a corresponding analog signal, even on a dual mode system operating in the same frequency band from a collocated site. Although the digital signal may be more robust, the Alliance proposal would require a dual mode phone to always select the stronger analog channel. In addition, CMRS carriers increasingly are deploying mini, micro and even pico cells. These cells provide highly reliable service because of their proximity to the user, but they also operate at extremely low power levels. The Alliance proposal would require CMRS phones to reject such low power signals from nearby base stations in favor of stronger signals transmitted from another carrier's more distant traditional cell site.

As noted above, acceptable variations in signal strength are not determinative of whether a wireless call will be processed. However, a system's capacity is determinative. If there are more call attempts than available channels in a given cell, calls will be blocked. The Alliance proposal posits a 911 call routing rule based solely on the strength of a CMRS system's control channel. The signal strength of the control channel is not affected by the loading of a cell's voice channels. Therefore, along a busy highway, where, by definition, there will be only one

strongest signal at any given spot, all of the wireless 911 calls from that stretch of highway would be directed to a single carrier -- and a single cell. In the event of an accident that triggers multiple 911 calls, the risk of blocking critical emergency calls (and call-backs from the PSAP) is much greater if the FCC rules were to require that all calls be sent to a single system, instead of distributing the calls among the CMRS systems in the same area that provide extremely reliable coverage -- but not the strongest control signal.

The Alliance proposal also references the existence of dead spots as a basis for supporting its proposal. Unfortunately, coverage holes do exist in CMRS systems. However, as noted above, the FCC's Part 22 rules already address the situation. Where one carrier has a dead spot, but service is being provided by another carrier, the mobile unit can be set to automatically select the available system. Every cellular phone already has this capability -- no rule change or redesign is required, only customer education.

In some instances, no carrier will have service in a specific area, often due to local topography, tunnels and other man-made obstructions, or local land use restrictions. For example, in the Washington, D.C., metropolitan area, restrictions on the use of federal lands, combined with

challenging topography, have made it extremely difficult for CMRS carriers to provide coverage along major commuting arteries, including Rock Creek Parkway, Canal Road, and the George Washington Memorial Parkway. This is especially true when the federal government controls land on both sides of highway, for example in McLean, Virginia, where the National Park Service controls access on the Potomac River side of the George Washington Parkway, and the Federal Highway Administration and Central Intelligence Agency control access on the other side. Changing the Commission's mobile station compatibility rules will do nothing to insure wireless users' access to 911 service along these roadways.

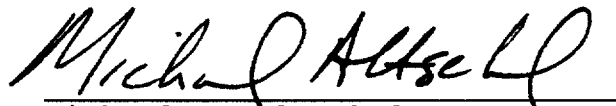
To accomplish the original goal of this proceeding, which is the broadened availability of enhanced 911 services to users of wireless telecommunications, the Commission should focus its efforts on providing CMRS licensees with the access they need to federal, state, and local lands and facilities, as well as preempting zoning restrictions that frustrate carriers' ability to provide reliable 911 service to wireless callers. If CMRS carriers are permitted access to the sites they require to provide coverage throughout their service areas, the Commission can harness the competitive forces created by its CMRS licensing structure to eliminate dead spots and insure the availability of

ubiquitous, high quality, and fully reliable wireless services.

CONCLUSION

For the foregoing reasons, the Commission should reject the proposed changes to the Commission's rules.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read "Michael F. Altschul", is written over a horizontal line.

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PORT ANGELES POLICE DEPARTMENT**

c/o Naomi L. Wu
321 East 5th Street
Port Angeles, WA 98362

SAN JUAN COUNTY

c/o David L. Zeretzke
350 Court Street, #5
Friday Harbor, WA 98250

**THURSTON COUNTY DEPARTMENT
OF COMMUNICATIONS**

c/o James C. Quackenbush
2000 Lakeridge Dr. S.W.
Olympia, WA 98502

**WASHINGTON TRACER
OREGON TRACER**

c/o Arthur A. Butler
Sara Siegler-Miller
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Seattle, WA 98101-2327

WATERWAY COMMUNICATIONS SYSTEMS, INC.

c/o Martin W. Bercovici
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WESTINGHOUSE ELECTRIC CORPORATION

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